The ASPIRE-to-Excellence Initiative

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From the Editor's Desk

It is being increasingly recognized that active student engagement in teaching-learning processes in higher educational institutions is of paramount importance to achieve excellence in desired outcomes. This is particularly relevant to medical education. In spite of stringent rules, regulations, policies and curricula prescribed by regulatory bodies and councils for imparting medical education and training in medical schools, we find that desired outcomes in respect of knowledge and clinical skills acquired by medical graduates are still not up to the mark. There are significant gaps. Our medical schools may be staffed with best of faculties, state-of-art equipments, good hospitals and top class infrastructure, what they lack is active and optimum student engagement in all academic and other activities of the institution. Students are the most important stake-holders of medical schools. They should have representation in all policy making academic committees of the institution. They should participate in designing curricula. Their feedback will help in improving teaching methodologies and in assessment procedures. They should be engaged in research activities under guidance of and in collaboration with their teachers. They should be encouraged and supported to participate in local, regional, national and international medical conferences and meetings. They should be made to participate in delivery of healthcare to communities. Their representatives must be allowed to sit in the governing bodies of the institutions. Their opinions should be given due weightage in framing new policies and rules. Their feedback about teaching faculty must be given due consideration in granting promotion to the faculty.

In one of the articles published in this issue of MGMJMS, engagement of medical students with curriculum has been discussed comprehensively by two reputed authorities in medical education namely: John Dent and Catherine Kennedy from Association for Medical Education in Europe (AMEE). I am sure our esteemed readers, who are keen to see improvement in the quality of medical education in our country, will benefit from this article. In addition, as usual, this issue contains a mix of interesting papers from various disciplines of medical sciences. We gratefully acknowledge the cooperation of all the contributors who have been submitting papers for MGMJMS. Our sole criteria for publication are quality and factual data.

Shibban K Kaul MS MCh FIACS
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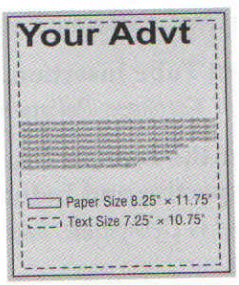

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ORIGINAL ARTICLE

Operative Management of Liver Injury in Polytrauma Patients: Experience of One Trauma Center

[1]Leszek Sulkowski, [2]Maciej Matyja, [3]Artur Pasternak, [4]Andrzej Matyja

ABSTRACT

Introduction: The liver is one of two most frequent abdominal parenchymal organs involved in trauma. Liver injury (LI) remains an important cause of trauma-related mortality. It is often accompanied by trauma to the other organs.

Materials, methods and results: During 9 years in the Provincial Trauma Center, out of 10,191 hospitalized patients, there were 1,702 trauma-related hospitalizations and 393 multiorgan traumas; 217 patients underwent surgery due to multiorgan trauma and coexisting LI. The most frequent coinvolved organs were spleen (83.9%), colon (33.6%), kidney (18.9%), small intestine (18.9%), pancreas (17.5%), gallbladder (16.6%), diaphragm (15.7%), and ileocecal valve (12.9%), with 33.2% of rib fractures and 31.3% of pneumothorax and pneumohemothorax. Grade of liver trauma was assessed according to American Association for the Surgery of Trauma—Organ Injury Scale (AAST-OIS). Fifty-two liver injuries (24,9%) were classified as AAST-OIS grade I, 54 (24.9%) as grade II, 46 (21.2%) as grade III, 41 (18.4%) as grade IV, and 25 (11.5%) as grade V. Patients received laparotomy (n = 205, 94.5%) or thoracolaparotomy (n = 12, 5.5%). Liver injuries were managed with electrocoagulation (n = 64, 29.5%), parenchymal sutures (n = 87, 40.1%), resectional debridement (n = 12, 5.5%), and perihepatic packing (n = 54, 24.9%).

Predominance of males and young patients with a mean age of 36 corresponds to accident statistics. Among patients receiving surgery, 88.9% had blunt trauma, with a high predominance of motor vehicle accidents.

Conclusion: Liver injuries predominantly follow a blunt abdominal injury. Despite good results of nonoperative management in hemodynamically stable patients with blunt trauma, surgery is still required due to complexity and seriousness of multiorgan injuries. Complex liver injuries require surgery in a well-equipped and active trauma center, since the mortality rate of surgical management of major liver injuries remains high.

Keywords: Liver injury, Multiorgan trauma, Polytrauma, Surgery.

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INTRODUCTION

The liver is the second most frequently injured intraperitoneal parenchymal organ, next to spleen.[1,2] Liver injuries constitute 5% of all traumas.[3-5] Liver injury may occur by blunt or penetrating force. Motor vehicle accidents along with sports-related injuries are the most common causes of blunt trauma. In blunt abdominal injuries, LI is the commonest cause of mortality.[6] In majority of cases, LI is accompanied by injury to the other organs.[7]

To asses a polytrauma patient, an effective, efficient, and rapid diagnostic protocol needs to be followed. Ultrasound, including a focused assessment with sonography for trauma (FAST), and computed tomography are used for diagnosis. The FAST is noninvasive, rapid, and repeatable, but operator-dependent and positive only when intraperitoneal fluid volume exceeds 400 mL.[1,4] An invasive diagnostic peritoneal lavage may be required if noninvasive diagnostic tools are not available.[8]

Liver injuries are classified in a 6-point organ injury scale proposed by the AAST, from the least severe (grade I) subscapular, nonexpanding hematoma <10 cm surface area or capsular laceration <1 cm of parenchymal depth, to the most severe (grade VI) hepatic avulsion (Table 1).[3,7,9-11]

The majority of LIs require a nonoperative management; 50 to 85% of blunt LIs can be treated conservatively. Hemodynamically stable patients with blunt LI can be managed nonoperatively.[2,4-6,12] Grade III or higher AAST-OIS of LI and hemodynamically unstable cases require surgery (perihepatic packing, parenchymal sutures, liver resections and resectional debridement, partial hepatectomy, lobectomy, or selective vessel ligation).[3-6,9,13]

In this retrospective study, we present a series of polytrauma patients receiving surgery due to severity of either liver or other organ injury. The trauma mechanism,

Table 1: Liver injury scale according to AAST-OIS[11]

AAST-OIS grade of LI	*Type of injury*		
	Hematoma	*Laceration*	*Vascular*
I	Subscapular, nonexpanding, < 10 cm surface area	Capsular tear < 1 cm parenchymal depth	
II	Subscapular, nonexpanding, 10–50% of surface area or intraparenchymal, nonexpanding, <10 cm in diameter	1–3 cm parenchymal depth, <10 cm in length	
III	Subcapsular >50% of surface area or expanding, ruptured subcapsular or parenchymal hematoma, intraparenchymal hematoma >10 cm in diameter	>3 cm parenchymal depth	
IV		Parenchymal disruption involving 25–75% of hepatic lobe	
V		Parenchymal disruption involving >75% of hepatic lobe	Juxtavenous hepatic injuries, i.e., retrohepatic vena cava or central major hepatic veins
VI			Hepatic avulsion

Table 2: Percentages of trauma-related hospitalizations, multiorgan and liver injuries among all hospitalized patients

	No. of patients	*% of all hospitalized*	*% of trauma-related hospitalizations*	*% of multiorgan traumas*
All hospitalized	10,191			
Trauma-related hospitalizations	1,702	16.7		
Multiorgan trauma	393	3,9	23.1	
Liver trauma	217	2,1	12.7	55.2

AAST-OIS score, operative procedures, and mortality are presented. Patients treated nonoperatively were excluded from this evaluation.

MATERIALS, METHODS, AND RESULTS

Out of a total of 10,191 patients treated in the Department of General and Vascular Surgery in the Provincial Trauma Center, Czestochowa, Poland, over a period of 9 years, 217 (2.13%) patients had sustained LI along with other thoracoabdominal injuries. A retrospective study was done in these 217 patients (Table 2). Of these, 137 (63.1%) were males and 80 were (36.9%) females. Their age ranged from 18 to 81 years with an average age of 34 years for males, 39 years for females, and 36 years for the combined group. In 193 patients (88.9%), cause was blunt trauma, majority (72.4%) due to motor vehicle accidents. In 24 patients (11.1%), injuries were caused by penetrating trauma.

Liver injuries were classified as per AAST-OIS scale: 52 (24%)—grade I, 54 (24.9%)—grade II, 46 (21.2%)—grade III, 41 (18.4%)—grade IV, and 25 (11.5%)—grade V (Table 3). Other organ injuries were spleen in 182 patients (83.9%), colon (33.6%), kidney (18.9%), small bowel (18.9%), pancreas (17.5%), gallbladder (16.6%), diaphragm (15.7%), and inferior vena cava (12.9%). Besides, 72 patients (33.2%) had associated rib fractures and 68 patients (31.3%) had pneumothorax/hemopneumothorax (Table 4).

Table 3: Grading of liver injuries based on AAST-OIS[11]

AAST-OIS LI scale	*n (%)*
I	52 (24.0)
II	54 (24.9)
III	46 (21.2)
IV	41 (18.4)
V	25 (11.5)

Table 4: Organs coaffected with LI in polytrauma patients

	n (%)	*AAST-OIS for organ-specific injuries*[11]
Spleen	182 (83.9)	I (n = 48); II (n = 56); III (n = 18); IV (n = 34); V (n = 26)
Colon	73 (33.6)	Ascending n = 7; transverse n = 34; descending and sigmoid n = 32
Rib fracture	72 (33.2)	
Pneumothorax and pneumohemothorax	68 (31.3)	
Kidney	41 (18.9)	I (n = 13); II (n = 9); III (n = 8); IV (n = 4); V (n = 7)
Small intestine	41 (18.9)	
Pancreas	38 (17.5)	I (n = 10); II (n = 15); III (n = 9); IV (n = 2); V (n = 2)
Gallbladder	36 (16.6)	
Diaphragm	34 (15.7)	
Inferior caval vein	28 (12.9)	
Pelvis fracture	27 (12.4)	
Bladder	23 (10.6)	
Stomach	12 (5.5)	
Esophagus	7 (3.2)	
Pericardial tamponade	4 (1.8)	
Ovary	3 (1.3)	

A total of 205 patients (94.5%) underwent laparotomy and in 12 patients (5.5%), laparotomy was combined with thoracotomy. Operative procedures carried out for liver injuries consisted of perihepatic packing, parenchymal sutures, resections (partial hepatectomy or lobectomy), and selective vessel ligation. Other organ injuries were treated as per general surgical principles; 23 patients (6%) died intraoperatively. Overall, in-hospital mortality was 16.6% (36 cases).

DISCUSSION

Liver injuries constitute an important component of multiorgan injuries. Motor vehicle accidents are the commonest cause of these injuries. Grading of liver injuries as per AAST-OIS is carried out by using three parameters: (i) extent and location of hematoma, (ii) length and depth of laceration, and (iii) severity and location of vascular trauma. These are shown in detail in Table 1. Higher the grade of injury, worse is the prognosis. Grade VI liver injuries rarely reach the hospital alive as in the present study.

Right lobe injuries are more common than left lob injuries in blunt trauma, as seen in this study (right lobe 74.6% *vs* left lobe 49.3%). Male preponderance (63.1%) as seen this study corresponds to accident statistics as expected. Majority of the injuries are caused by blunt trauma (88.9% in this study) and most of these are due to motor vehicle accidents. These figures correspond to data published in literature.[1,5,6] Incidence of gunshot injuries in our study was only 1.8%, which corresponds with the data of other countries where possession of firearms is illegal. Splenic injury was the commonest one associated with liver injuries in our series (83.9%). Similar incidence has been reported by other authors.[1,5,13]

Bleeding from major liver injuries remains an important cause of mortality. The trauma surgeon has to be familiar with all methods of controlling bleeding from liver. In our series, bleeding from liver injuries was controlled by electrocoagulation in 29.5% cases, parenchymal sutures in 40.1%, resectional debridement in 5.5% and perihepatic packing, followed by relook laparotomy. Procedure to be used depends upon hemodynamic status of the patient, severity of LI, presence of other organ injuries (which need to be treated simultaneously), and expertise of the trauma center.[3-6,9,13] Mortality rate of liver injuries remains high. Higher AAST-OIS grade, prolonged prothrombin time, and decreased platelet count are associated with higher mortality.[13]

CONCLUSION

Liver injuries predominantly occur due to blunt trauma. When associated with other organ injuries, surgery is required in all cases. Mortality of major liver injuries remains high. Trauma surgeons must be familiar with various modalities of management of liver injuries. The aim should be to stop bleeding as expeditiously as possible. They also must possess expertise to deal with other injured organs in a polytrauma patient.

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REVIEW ARTICLE

The ASPIRE-to-Excellence Initiative: Can We recognize Excellence in Student Engagement with the Curriculum?

[1]John Dent, [2]Catherine Kennedy

ABSTRACT

Research has demonstrated clear benefits of student engagement both in terms of student performance and for academic institutions. Policy guidelines from a variety of sources have advocated for student engagement on a variety of levels. Academic Support Program Inspiring Renaissance Educators (ASPIRE)-to-Excellence initiative represents a means for medical schools to gain recognition of their achievements in this area. We continually see examples of positive initiatives through our work with AMEE, an international association for medical education and the Essential Skills in Medical Education course for students (ESME-Student). We hope to encourage further debate and sharing of experiences to promote student engagement.

Keywords: Academic support program inspiring renaissance educators-to-excellence, Criteria, Curriculum development, Student engagement.

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INTRODUCTION

The question of how to enhance student engagement in their learning has long been a consideration in medical education. Approaches taken to student engagement in higher education have varied from those which have sought to identify student involvement, to gather feedback, increase representation, and assess approaches to learning.[1] In recent years, this concept of engagement has been extended to include a requirement for curricula to be focused on student-centered learning[2] and for the involvement of students in curriculum development. Whilst a variety of policy statements have been issued which outline this requirement, it is less clear how such requirements are to be assessed or evaluated. One initiative that has sought to do so has been the ASPIRE-to-Excellence Initiative,[3] launched in 2012 by AMEE. In this article, we will explore the context and issues relating to student engagement within the curriculum before exploring how the ASPIRE initiative can be used to identify examples in practice. In doing this, we will draw on a range of illustrative practice.

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DEFINING "STUDENT ENGAGEMENT"

Student engagement has increasingly become an expectation for medical education providers and is included within a variety of policy statements and guidance for practice.[1] It has traced its origin back to the 1980s to the work by Astin[4] on student involvement, and highlighted the common use of the terms in North America and Australasia in their large-scale student engagement surveys (National Survey of Student Engagement and Australasian Survey of Student Engagement). While the term has traditionally been less commonly used within Europe, it has increasingly been evident in a range of higher education policy directives and guidance, for example, within the Bologna Process.[5] However, definitions as to what social engagement is and includes varies greatly. As The Student Engagement Partnership (TSEP)[6] notes, "there is no single, fixed, universal definition or model of student engagement; it is something which is intrinsically linked to and shaped by the context of the higher education provider in which it is situated."

Kahu[7] identified four different approaches to student engagement:

1. Behavioral, which focuses on student behavior and effective teaching practice;
2. Psychological, which centers on internal individual processes of engagement, including behavior, cognition, emotion, and conation;
3. Sociocultural, which highlights the importance of the wider social, political, and cultural contexts; and
4. Holistic, which synthesizes the elements of the above approaches.

The TSEP has distinguished three different categories of student engagement:

1. Academic—engagement in and with learning;
2. Social—engagement in and with the wider learning community;
3. Enhancement—engagement in and with processes, such as quality, governance, etc.[6]

Student engagement is widely seen as having many benefits for institutions, such as increased student retention,[8] reputational and quality assurance,[9] and student engagement in academic research and teaching to the benefit of medical education in general.[10] The benefits for students were considered to be increased satisfaction with studies,[11] improvement in learning, cognitive development, and critical thinking studies;[11,12] improved grades,[13] and a greater sense of connectedness, affiliation, and belonging.[14] It has been argued that a sense of belonging aides learning.[15]

FRAMEWORKS FOR ENGAGEMENT

A number of frameworks for the inclusion of student engagement as a priority within higher education have been developed. At a European level, the European Higher Education Area (EHEA)[2] included student-centered learning as part of the Bologna Process in its Leuven/Louvain-la-Neuve Communiqué. This stated that "student-centred learning requires empowering individual learners, new approaches to teaching and learning, effective support and guidance structures and a curriculum focused more clearly on the learner in all three cycles."[2] It continued, "Academics, in close cooperation with students and employer representatives, will continue to develop learning outcomes and international reference points for a growing number of subject areas."[2] Student engagement was further put forward in the EHEA Bucharest Communiqué[5] which stated the need to "establish conditions that foster student learning, innovative teaching methods and a supportive and inspiring working and learning environment while continuing to involve students and staff in governance structures at all levels." As part of the European MEDINE2 initiative, research exploring future trends in medical education[16] identified a current trend in medical education as being "the empowerment of students to take responsibility for their own learning and student involvement in curriculum planning committees as major current trends that it was hoped would develop further in the future."[17]

In the UK, the Quality Assurance Agency[18] for Higher Education has emphasized the importance of student engagement in terms of their motivation for learning and independent learning, and also their participation in the quality assurance and enhancement of educational provision. In Scotland, Student Participation in Quality Scotland[19] in partnership with key higher agencies identified five key elements of student engagement:

1. Students feel a part of a supportive institution;
2. They are engaged in their own learning;
3. They work with the institution in shaping the direction of learning;
4. There are formal mechanisms for quality assessment and governance;
5. Influencing student experience at a national level.

More recently, and specific to the area of medical education, the General Medical Council in the UK in their guidance "Promoting excellence: Standards for medical education and training"[20] include the recommendation: "R5.2 The development of medical school curricula must be informed by medical students, doctors in training, educators, employers, and other health and social care professionals and patients, families and carers".

THE ASPIRE-TO-EXCELLENCE INITIATIVE

With the variety of policy frameworks and guidance clearly advocating student engagement, the logical next step is how to put this into practice and enable medical schools to demonstrate the ways in which it is being implemented. Further, at a time in which excellence in research is often prioritized over teaching, there is a clear need to highlight positive teaching initiatives.

The concept of recognizing and rewarding excellence in teaching and learning in medical schools was first proposed by Harden and Wilkinson.[21] Following on from this, the ASPIRE-to-Excellence initiative was launched by AMEE in 2012. It sought to provide international recognition of excellence in education, teaching and learning, alongside research, as the mission of a medical, dental, or veterinary school. It was envisaged as going beyond the traditional accreditation process, with which we are all familiar, by recognizing that the educational program in a school can be subjected to peer review against an agreed set of standards or benchmarks that identify world-class excellence in education. The ASPIRE Board first met in 2010 and agreed on the criteria and subcriteria against which submissions for consideration for the award were to be assessed. Initial Areas or Themes in which excellence could be displayed were Student Engagement, Assessment of Students, and the Social Accountability of the Medical School. Later, two further areas were added, Faculty Development, and Simulation. The ASPIRE Board was charged with oversight of the awards and included 22 members from 15 different countries. A truly international opinion on an application could therefore be given in reference to its local context. In addition, a panel of experts in each of the five Areas or Themes identified would assist in reviewing and giving feedback to each institution making a submission. The area panel for Student Engagement consists of 12 members from 11 countries.

Table 1: Academic support program inspiring renaissance educators criteria and subcriteria for student engagement with the curriculum[22]

Criterion 1—*Student engagement with management of the school, including matters of policy, mission, and vision of the school* (student engagement with the structures and processes)
1.1 Students have been involved in the development of the school's vision and mission.
1.2 Students are represented on school committees.
1.3 Students are involved in the establishment of policy statements or guidelines.
1.4 Students are involved in the accreditation process for the school.
1.5 Students have a management/leadership role in relation to elements of the curriculum.
1.6 Students' views are taken into account in decisions about faculty (teaching staff) promotion.
1.7 Students play an active part in faculty (staff) development activities.
Criterion 2—*Student engagement in the provision of school's education program* (student engagement with the delivery of teaching and assessment)
2.1 Students evaluate the curriculum and teaching and learning processes.
2.2 Feedback from the student body is taken into account in curriculum development.
2.3 Students participate as active learners with responsibility for their own learning.
2.4 Students are involved formally and/or informally in peer teaching.
2.5 Students are engaged in the development of learning resources for use by other students.
2.6 Students provide a supportive or mentor role for other students.
2.7 Students are encouraged to assess their own competence.
2.8 Students engage in peer assessment.
Criterion 3—*Students' engagement in the academic community* (student's engagement in the school's research program and participation in meetings)
3.1 Students are engaged in school research projects carried out by faculty members.
3.2 Students are supported in their participation at local, regional, or international medical, dental, veterinary, and health professions education meetings.
Criterion 4—*Student engagement in the local community and service delivery*
4.1 Students are involved in local community projects.
4.2 Students participate in the delivery of local health care services.
4.3 Students participate in health care delivery during electives/attachments overseas.
4.4 Students engage with arranged extracurricular activities.

Demonstrating Student Engagement

In seeking to identify examples of excellence in student engagement, the ASPIRE panel highlighted the need to demonstrate students' active contribution and consultation in their teaching and learning. Four broad criteria were identified:

1. Student engagement with the management of the school, including matters of policy and the mission and vision of the school (Student engagement with the structures and processes).
2. Student engagement in the provision of the school's education program (Student engagement with the delivery of teaching and assessment).
3. Student engagement in the academic community (Students' engagement in the school's research program and participation in meetings).
4. Student engagement in the local community and the service delivery.

These criteria and their subcriteria are listed in Table 1.

Examples of Excellence in Student Engagement

In the 6 years since its launch, the ASPIRE initiative has identified many examples of excellence in student engagement in medical schools, and a list of the institutions who have been successful in their applications can be found in Table 2.

Table 2: Academic support program inspiring renaissance educators-to-Excellence award winners[23]

2013	Southern Illinois, USA; Aga Khan University, Pakistan; Maribor University, Slovenia; International University, Malaysia; University of Western Australia; Minho University, Portugal
2014	Southampton University, UK
2015	Charitie Universidad, Germany; University of Leeds, UK; Utrecht University, Netherlands; Uppsala University, Sweden; Schulich University, Canada; Chulalongkorn University, Thailand
2016	School of Veterinary Medicine, UK
2017	Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia

In addition, through our work with AMEE and in the wider medical education community, there are other examples of medical school practice which may be considered as illustrating one of the aspects of student engagement with the curriculum, as defined by the criteria and subcriteria.

ESME-Student[24] Criteria 1

This 12-week program based on the successful ESME Online course,[25] provides a student-focused introduction to ESME. Its aim is to engender interest in medical education and to provide a vocabulary and awareness of key topics to enable students to participate more fully in dialogue with

their medical school. The course includes six key topics presented as webinars, followed by prescribed reading and discussion groups, and finishes with an assignment. Since its start in 2015, this annual course has attracted 216 participants from 33 countries; 90% of participating students found the course of great or considerable value, and 91% would recommend it to others. The pass rate for participants in the online course was 90%.

SPICES Approach[26] Criteria 2.1

As part of the ESME-Student course, medical students were asked to evaluate the curriculum of their medical school using the student-centered, problem-based, integrated, community-based, elective-oriented, and systematic (SPICES) model. The SPICES approach describes any curriculum as lying at some point on a spectrum between innovative and traditional (Table 3).

A review of the opinions of 100 students selected at random from the ESME-Student course found that 30% considered their curriculum to be student-centered while 30% thought it was largely teacher-centered. The remainder described a balanced curriculum between the two extremes.

Peer-assisted Learning Criteria 2.4[27]

Encouragingly, as part of the ESME-Student course, many students shared with us examples of direct experience of peer learning approaches. Some students had been involved in setting up their own initiatives. For example, senior students in the peer-assisted learning program for colleagues in the University of Health Sciences, Phnom Penh, Cambodia, have developed a course to teach other seniors how to be effective tutors to junior students. Their work was presented at the AMEE conference in 2017.

Engagement with the Academic Community Criteria 3

Since 2000, the number of students cited as coauthors of papers published in Medical Teacher has increased from 78 to 183. Two final-year medical students in Dundee devised a cadaver shoulder hemiarthroplasty program in a simulated operation theater to teach anatomy to third-year students. This provided purposeful exposure to anatomy, some insight into orthopedic surgery and created a memorable learning experience. Their work was subsequently published.[28] In addition, within AMEE, medical students are encouraged to take part in our annual conference, to represent student members on committees and the AMEE Executive and, through the award of bursaries, to present academic papers and posters.

Table 3: The SPICES model for curriculum development[26]

Characteristics of an innovative curriculum			*Characteristics of a traditional curriculum*
S	Student-centered	⟷	Teacher-centered
P	Problem-based	⟷	Information gathering
I	Integrated	⟷	Discipline-based
C	Community-based	⟷	Hospital-based
E	Elective-oriented	⟷	Standard program
S	Systematic	⟷	Apprenticeship-based/opportunistic

CONCLUSION

The recognition of excellence in teaching has long been overlooked as medical schools are more usually ranked on their academic and financial achievements in research. The idea proposed by the ASPIRE initiative is that it should be possible to subject a medical school to international peer review against an agreed set of standards that would identify world-class excellence in education. "Student engagement" represents one area which can be assessed for an ASPIRE award. Criteria and subcriteria agreed by the panel are used to assess the medical school's performance against benchmark standards irrespective of the school's ability to access expensive resources. The benefits to institutions and students of promoting student engagement have been recorded. Some examples of student engagement have been suggested.

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